

# PTB100 Analog Barometer



## Features/Benefits

- Several pressure ranges
- Accuracy at room temperature  $\pm 0.3$  hPa (PTB100A/PTB101C)
- Long-term stability  $\pm 0.1$  hPa/year
- On/off control with external trigger
- Output voltage 0...2.5 or 0...5 VDC
- Current consumption less than 4 mA
- Mountable on a 35 mm wide DIN rail
- NIST traceable (certificate included)

*The Vaisala BAROCAP® Analog Barometer PTB100 is ideal for data logger applications.*

The Vaisala BAROCAP® Analog Barometer PTB100 is suitable for a variety of applications, such as environmental pressure monitoring, data buoys, laser interferometers, agriculture, and hydrology.

### Excellent long-term stability

The PTB100 barometer is designed both for accurate barometric measurements at room temperature and for general environmental pressure monitoring over a wide temperature range. The excellent long-term stability of the barometers minimizes or even removes the need for field adjustment in many applications.

### Ideal for data logger applications

The compact PTB100 barometer is ideal for data logger applications because of the low power consumption, selectable external on/off control, practical output voltage ranges and three or four wire connection capability.

### Vaisala BAROCAP® technology

The PTB100 barometers use the Vaisala BAROCAP® Sensor, a silicon capacitive absolute pressure sensor developed by Vaisala for barometric pressure measurement applications. The sensor combines the outstanding elasticity characteristics and mechanical stability of single-crystal silicon with the proven capacitive detection principle.

All PTB100 barometers are delivered with a factory calibration certificate, which is NIST traceable.

# Technical Data

## Operating range (1hPa=1mbar)

Pressure range	
PTB100A	800...1060 hPa
PTB100B/PTB 101B	600...1060 hPa
PTB101C	900...1100 hPa
Temperature range	-40...+60 °C (-40...+140 °F)
Humidity range	non-condensing

## Accuracy

	PTB100A/PTB101C	PTB100B/PTB101B
Linearity*	±0.25 hPa	±0.45 hPa
Hysteresis*	±0.03 hPa	±0.05 hPa
Repeatability*	±0.03 hPa	±0.05 hPa
Calibration uncertainty**	±0.15 hPa	±0.15 hPa
Accuracy at +20 °C (+68 °F)***	±0.3 hPa	±0.50 hPa

- \* Defined as ±2 standard deviation limits of end point non-linearity, hysteresis error or repeatability error
- \*\* Defined as ±2 standard deviation limits of inaccuracy of the working standard at 1000 hPa including traceability to NIST
- \*\*\* Defined as the root sum of the squares (RSS) of end-point non-linearity, hysteresis error, repeatability error and calibration uncertainty at room temperature

Total accuracy	PTB100A/PTB101C	PTB100B/PTB101B
+20 °C (+68 °F)	±0.3 hPa	±0.5 hPa
0...+40 °C (+32...104 °F)	±1.0 hPa	±1.5 hPa
-20...+45 °C (-4...113 °F)	±1.5 hPa	±2.0 hPa
-40...+60 °C (-40...140 °F)	±2.5 hPa	±3.0 hPa

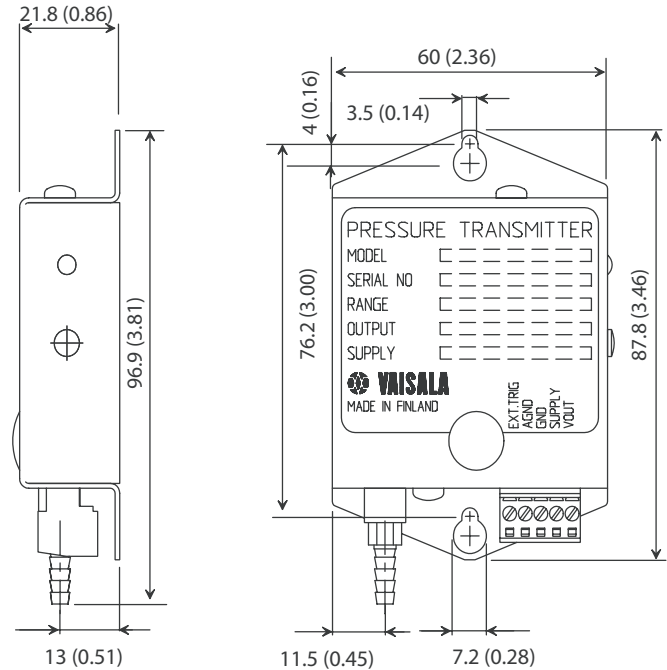
Long-term stability	±0.1 hPa/year
Effect of thermal or mechanical shocks	< ±0.2 hPa

## General

Supply voltage	10...30 VDC
Supply voltage control	with TTL level trigger
	when enabled with an internal jumper, barometer can be triggered on/off using external TTL level trigger
Supply voltage sensitivity	less than 0.1 hPa
Current consumption	
operation mode	less than 4 mA
shutdown mode	less than 1 µA
Output voltage	
PTB100A/PTB 100B	0...5 VDC
PTB101B/PTB101C	0...2.5 VDC
Resolution	0.1 hPa
Load resistance	10 kohm minimum
Load capacitance	47 nF maximum
Settling time at power-up	1 s
Response time (100% response)	300 ms
Warm-up shift	less than 0.1 hPa
Acceleration sensitivity	negligible
Pressure connector	M5 (10-32) internal thread
Pressure fitting	barbed fitting for 1/8" I.D. tubing
Maximum pressure limit	2000 hPa abs.
Electrical connector	a removable connector for five wires (AWG 28...16)
Housing material	aluminum
Weight	85 g
Electromagnetic compatibility	Complies with EMC standard EN61326-1, Generic Environment

## Dimensions

Dimensions in mm (inches)



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